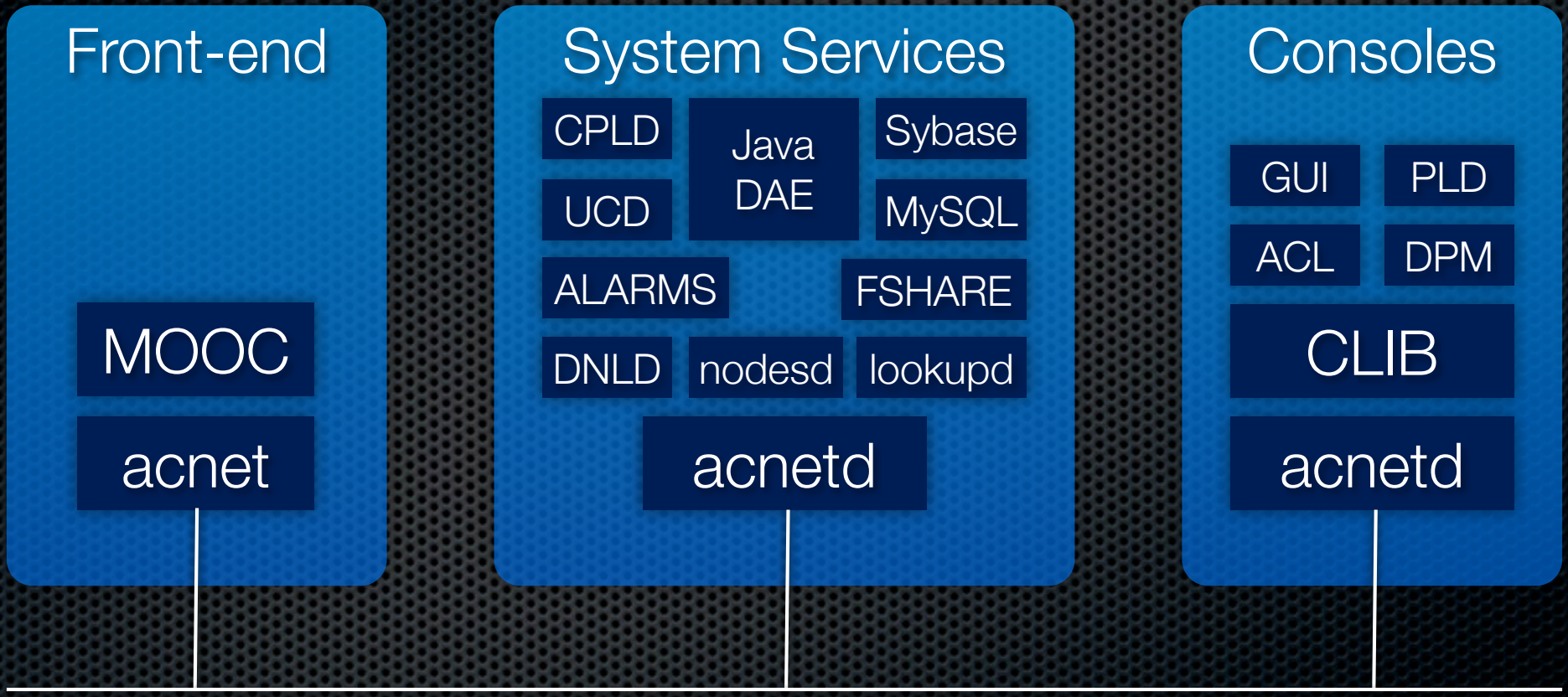
ACNET-in-a-Box

Richard Neswold
Fermi National Accelerator Laboratory
September 8, 2010

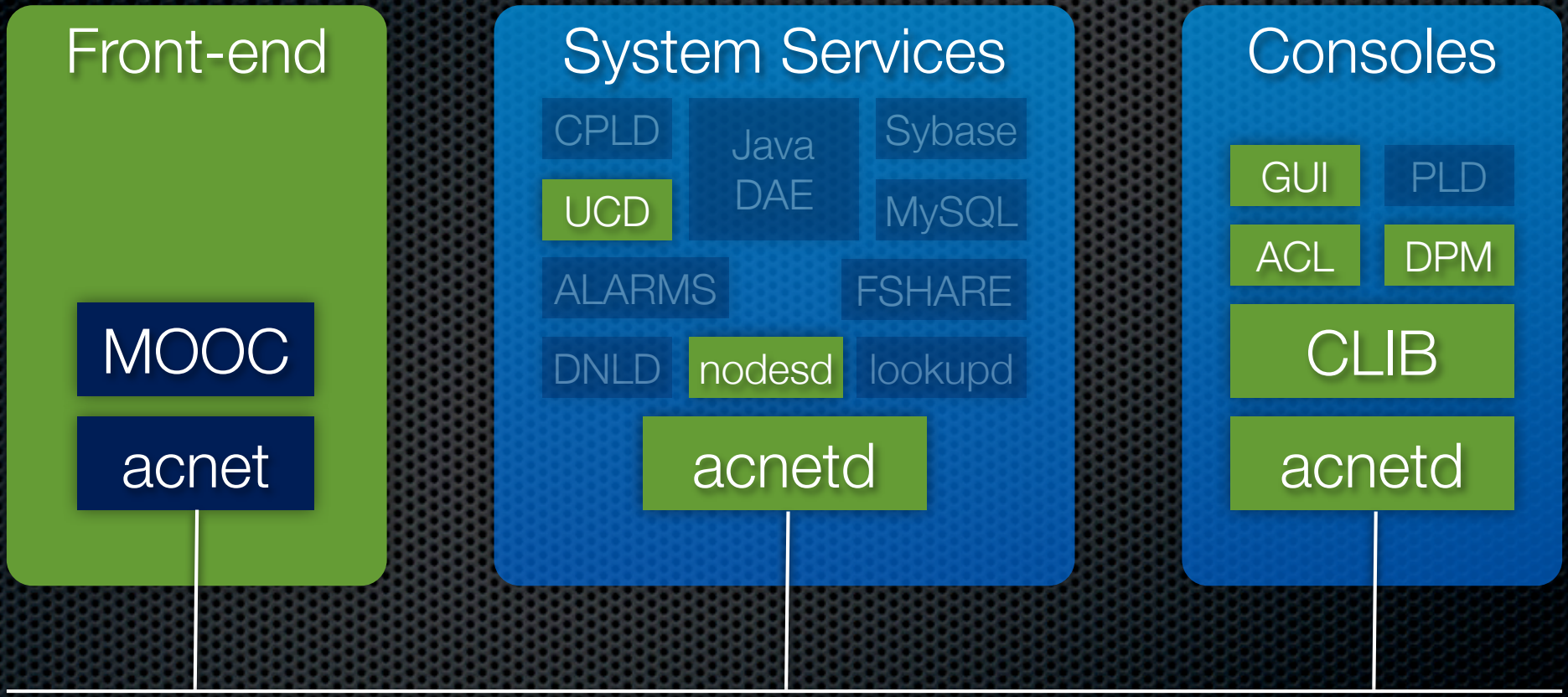
Purpose

- To aid collaborators
  - Allows building and testing an ACNET front-end
  - NOT meant to be a drop-in controls system solution
- To make ACNET better
  - Clean up some historical baggage
  - Keeps us “honest” with future design choices

(Simplified) Fermilab Control System



Mini Control System



Console Environment

- CLIB works on Linux/i386 and is used by practically every app and service
  - Includes ACL (a powerful scripting language)
  - Includes the GUI library
- Three guaranteed apps
  - Device database viewer/editor (D80)
  - Parameter Page
  - Fast Time Plot Page

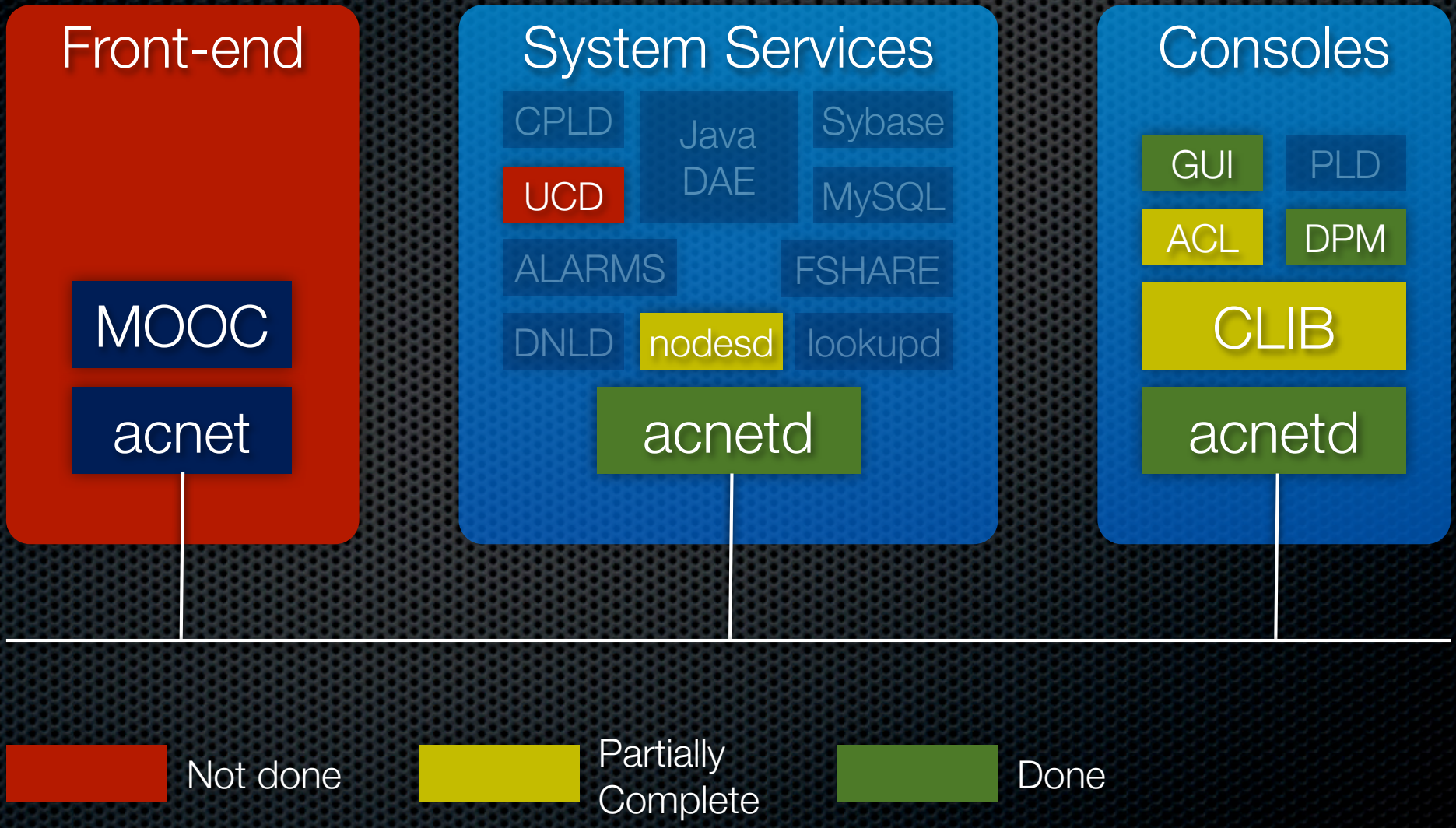
System Service

- Only three services are required (acnetd, nodesd and ucd)
  - nodesd has a database requirement (currently uses Sybase via CLIB.)
  - ucd needs to be written (or ported), which provides a source of simulated TCLK events
- Considering adding ALARM support (which brings in the alarm and dnld tasks and two more applications)

Front-ends

- This area has the most work to do
  - Mostly due to our front-ends running on VxWorks
- We are investigating using Linux as a front-end platform
  - Can rewrite front-end framework to follow modern programming idioms
  - Can port MOOC to Linux

How Close Are We?



Path to Completion

- CLIB
  - Generalize the database interface (to remove the Sybase requirement)
  - Remove CPLD/PLD infrastructure
- ACL
  - Conditionally compile out Fermi-specific features
- Database viewer
  - Remove dependency on FSHARE - use database instead
- Front-ends
  - Port MOOC to Linux
  - Finish alternative framework